

Amendments to the Specification:

Kindly replace the paragraph beginning on page 24, line 1 with the following paragraph:

The following requirements assume that Dynamic Burst Profile mode is enabled for a particular MAC domain:

- (1) The CMTS should be capable of recognizing a bandwidth request from a Dynamic Burst Profile enabled CM on this MAC Domain and assume that the request does not include PHY overhead (as mentioned earlier, two methods are (a) in the CM registration process, the CM communicated with the CMTS that it is dynamic burst profile mode capable, and the CMTS acknowledged it and (b) within each burst, the setting of the FC_PARM[4] bit equal to 1 in the DOCSIS MAC header could be used to indicate a request without PHY overhead).
- (2) In response to a bandwidth request from a Dynamic Burst Profile enabled CM, the CMTS should be capable of selecting a burst profile, grant the number of mini-slots that includes the necessary PHY overhead for the burst profile, and specify the IUC code corresponding to the selected burst profile in the grant. The selected burst profile should not correspond to IUC = 1, 2, 3, or 4. The CMTS scheduler is required to make the assumption that the amount of data that the CM is requesting to send is equivalent to the maximum amount of data that can fit into the number of requested mini-slots: in other words, number of mini-slots multiplied by bytes per mini-slot;
- (3) The CMTS should be capable of selecting a burst profile for a Dynamic Burst Profile enabled CM based using an algorithm that considers the information on error

performance, signal-to-noise ratio, or modulation error ratio of the CM that is provided by the CMTS. The CMTS shall select more robust burst profiles for CMs that need more robust transmission based upon the upstream error monitoring. The CMTS should be capable of using more bandwidth efficient burst profiles for CMs that do not have transmission problems due to localized impairments or impairments unique to their upstream paths. "More robust" implies burst profiles with a lower order of modulation, more Reed-Solomon parity bytes relative to the number of information bytes per codeword, longer preamble lengths relative to information bytes per codeword. Using a lower order of modulation, more Reed-Solomon parity, and longer preamble lengths decrease bandwidth efficiency. Thus, there is the robustness versus bandwidth efficiency tradeoff; and

(4) The CMTS should be capable of measuring the following counts on a per CM basis in order to determine appropriate burst profiles to assign:

- Total received codewords
- Uncorrectable codewords
- Correctable errored codewords
- Missed detections (i.e., non-acquisition of upstream bursts)
- Modulation Error Ratio (purity of channel)
- Signal to Noise Ratio
- Packet Loss
- Echo Delay Spread (measurement of Amplitude of echo and its delay).